

## CLAIMS

1           1.     A sub-atmospheric water desalinization still, comprising:  
2                 a closed top tank having the lower part of the tank filled with water to  
3     be distilled in the sub-atmospheric vacuum at the top of the tank above the  
4     water level within the tank so that water to be distilled vaporizes into the  
5     vacuum area;  
6                 a heat exchanger disposed within the tank;  
7                 a compressor having its inlet connected to the vacuum area and having  
8     its outlet connected to the heat exchanger; and  
9                 a natural force powered source powering the compression, whereby the  
10    vapor in the vacuum area is compressed and cooled in the heat exchanger to  
11    produce relatively pure water.

1           2.     The still of claim 1 wherein the natural force comprises wind  
2     power driving a wind turbine which drives the compressor.

1           3.     The still of claim 1 wherein the natural force comprises wave  
2     power which drives a wave power motor which drives the compressor.

1           4.     The still of claim 1 including a second heat exchanger within  
2     the tank having one end connected to a source of water to be distilled and the  
3     other end connected to the vacuum volume within the tank and a pump forcing

4 water to be distilled through the heat exchanger and into the vacuum volume  
5 within the tank.

1 5. The still of claim 4 wherein the flow volume through the second  
2 heat exchanger is greater than required to replenish the tank as a result of  
3 vaporization.

1 6. The still of claim 5 including a spray head feeding the water  
2 passing through the second heat exchanger into the vacuum area.

1 7. A sub-atmospheric water desalinization still, comprising:  
2 a closed top tank;  
3 means for filling the lower part of the tank with water to be distilled;  
4 a vacuum at the top end of the tank in the volume above the water level  
5 within the tank so that seawater vaporizes into the vacuum area;  
6 a first heat exchanger disposed within the tank;  
7 a compressor for pumping vapor from the vacuum area at the top of the  
8 tank through the heat exchanger to a sump for distilled water;  
9 a second heat exchanger within the volume of water in the tank;  
10 a connection between second heat exchanger and a source of water to  
11 be distilled; and

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12           a connection between the other end of the second heat exchanger and  
13           the vacuum volume within the tank to replenish the vaporized water in the tank  
14           and rinse the heat exchangers.

1           8.     The still of claim 7 in which the tank has an opened ended  
2           bottom disposed within the source of water to be distilled and the tank has a  
3           greater height than the height of a body of water to be distilled which can be  
4           supported by the pressure at the bottom of the tank so as to create said vacuum  
5           area at the top of the tank.

1           9.     The still of claim 7 including a wind turbine powering the flow  
2           through said first and second heat exchangers.

1           10.    The still of claim 7 including a wave-powered motor for  
2           powering the passage of vapor from the vacuum area through the first heat  
3           exchanger.